Comparing RFV to RFQ for Scissors Clip and PEAQ

Dr. Dan Undersander
University of Wisconsin

RFV vs RFQ

Relative Feed Value =

$$\frac{\text{(Intake Potential * Digestible DM)}}{\text{Constant}}$$

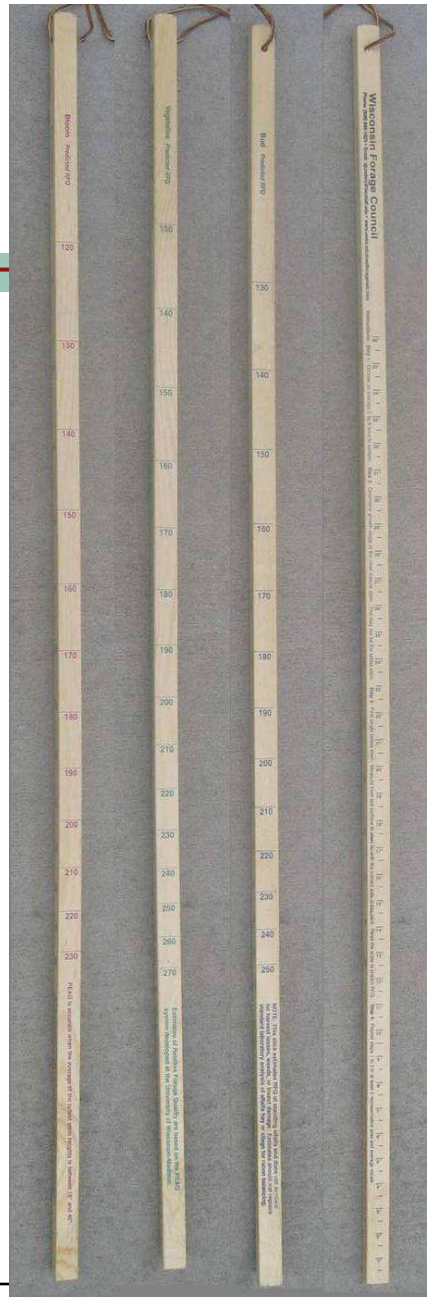
Relative Forage Quality (RFQ) =

$$\frac{\text{(dIntake Potential * dTDN)}}{\text{Constant}}$$

How to determine RFQ using Forage Quality Stick

Can we estimate RFQ using a Forage Quality Stick?

If so, how do we make RFQ estimate in spring

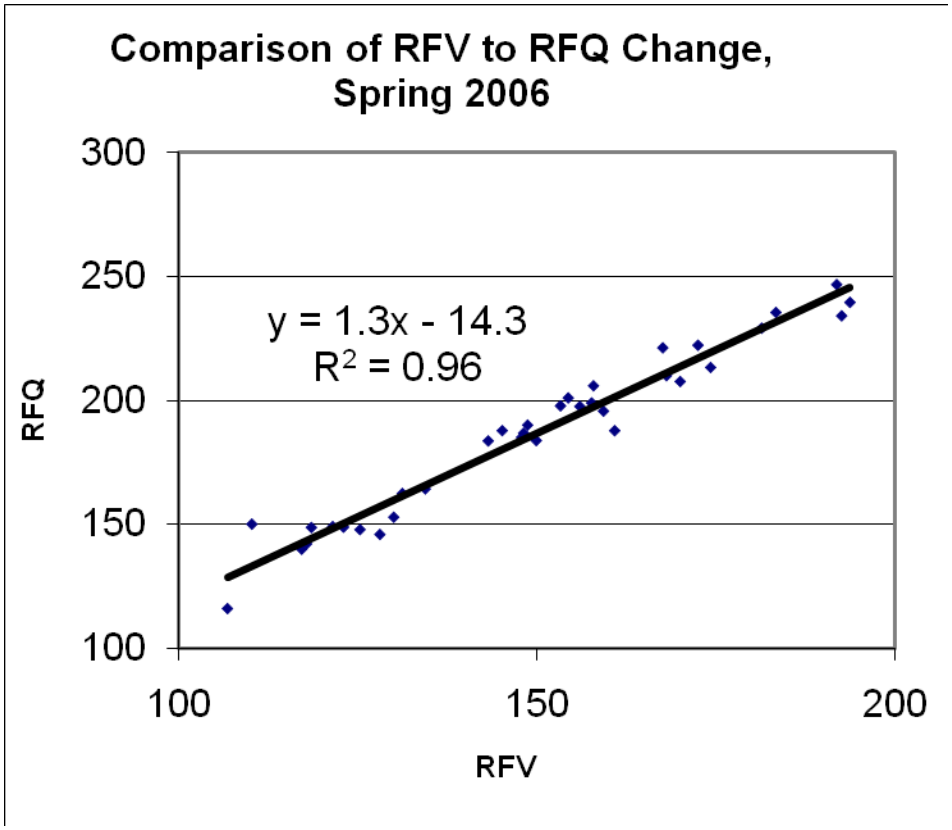


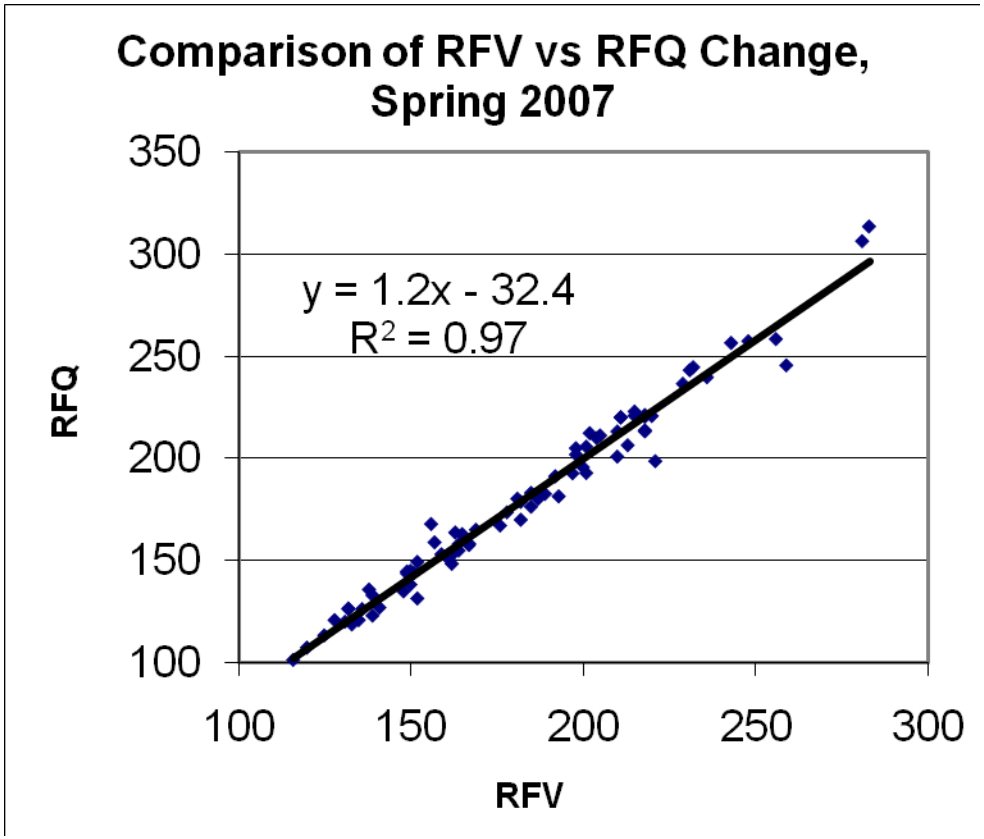
The study - repeated samplings of alfalfa

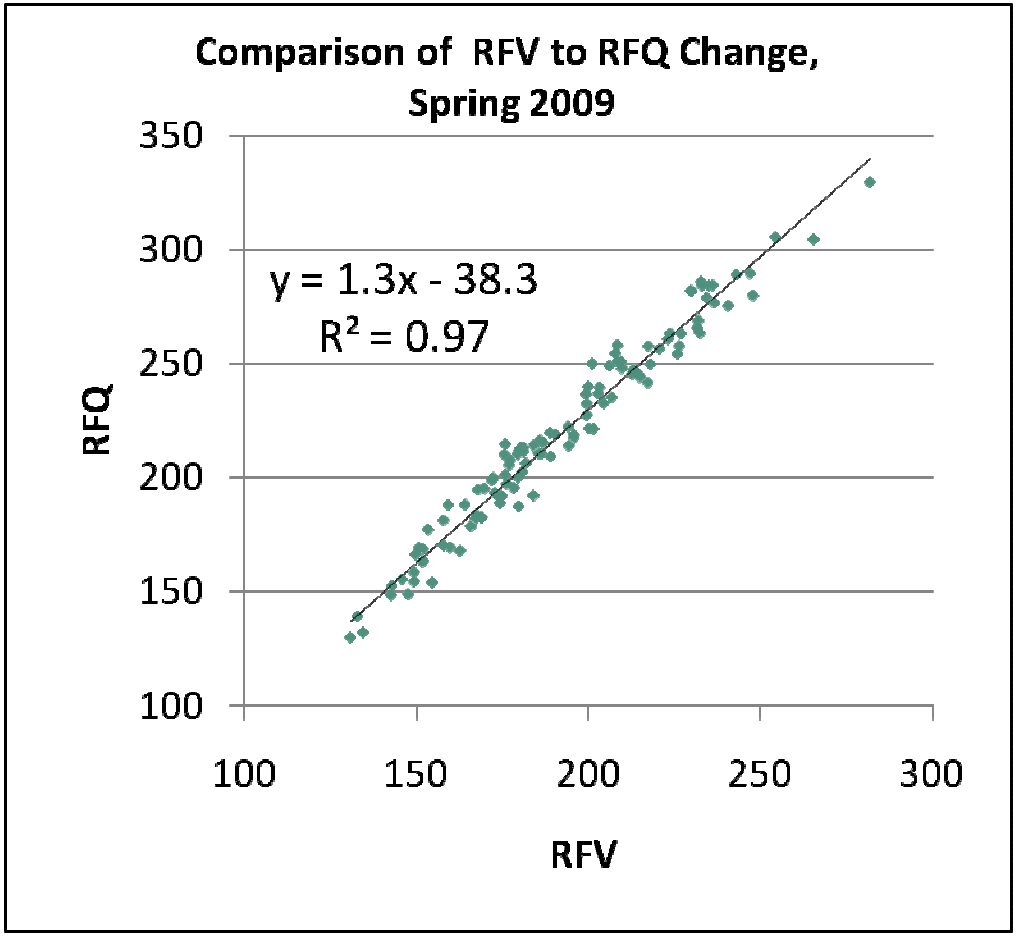
- Multiple sites
  - 3 sites in 2006
  - 15 sites in 2007 across MN and WI
  - 12 sites in 2009 across WI
- Multiple years
  - 34 samples in 2006, 158 samples in 2007 and 112 samples in 2009.
- Sampled from May 5 to June 15.
- All samples were analyzed at the UW Marshfield Soil and Forage Testing Laboratory.

Rate (units) of Alfalfa Forage Quality Change per Day, 2006, 2007 and 2009 in Mn and WI

Component	2006	2007	2009	Mean
Crude Protein	-0.19	-0.32	-0.23	-0.25
Acid Detergent Fiber	0.30	0.46	0.33	0.36
Neutral Detergent Fiber	0.33	0.56	0.41	0.43
Neutral Detergent Fiber Digestibility	-0.34	-0.45	-0.51	-0.43
RFV	-1.7	-3.9	-3.0	-2.9
RFQ	-2.4	-4.7	.4.1	-3.6




Comparison of RFV vs RFQ Change, Spring 2007
y = 1.2x - 32.4
R2 = 0.97
RFQ
RFV
350
300
250
200
150
100
100
150
200
250
300



RFV

Intake Potential		120/NDF
Digestible DM	*	88.9 - (0.779*ADF)
	÷	1.29

RFQ

Intake potential

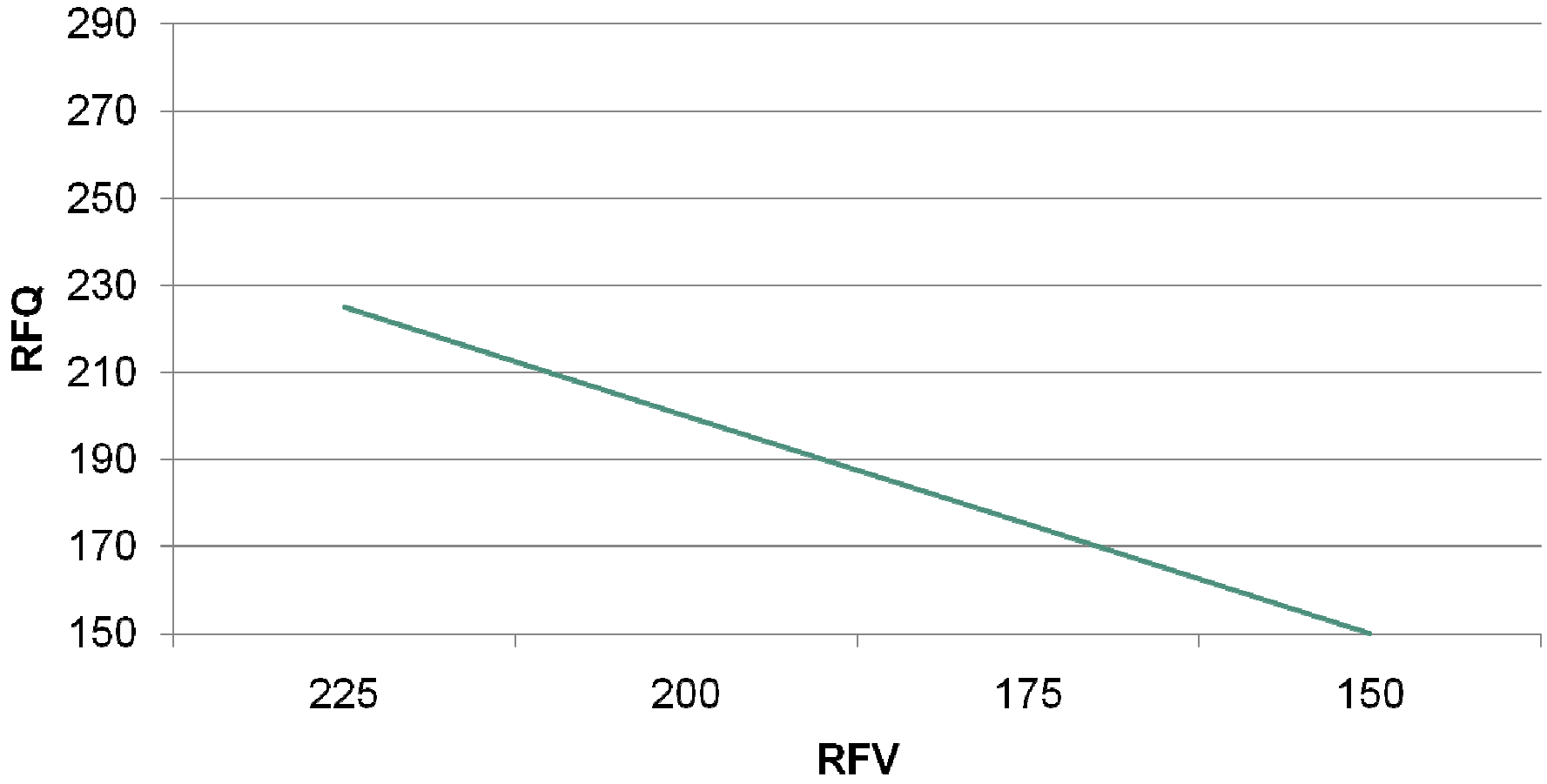
(120/NDF) + (NDFD-45)*0.374*1350/100

Total Digestible Nutrients (dTDN)

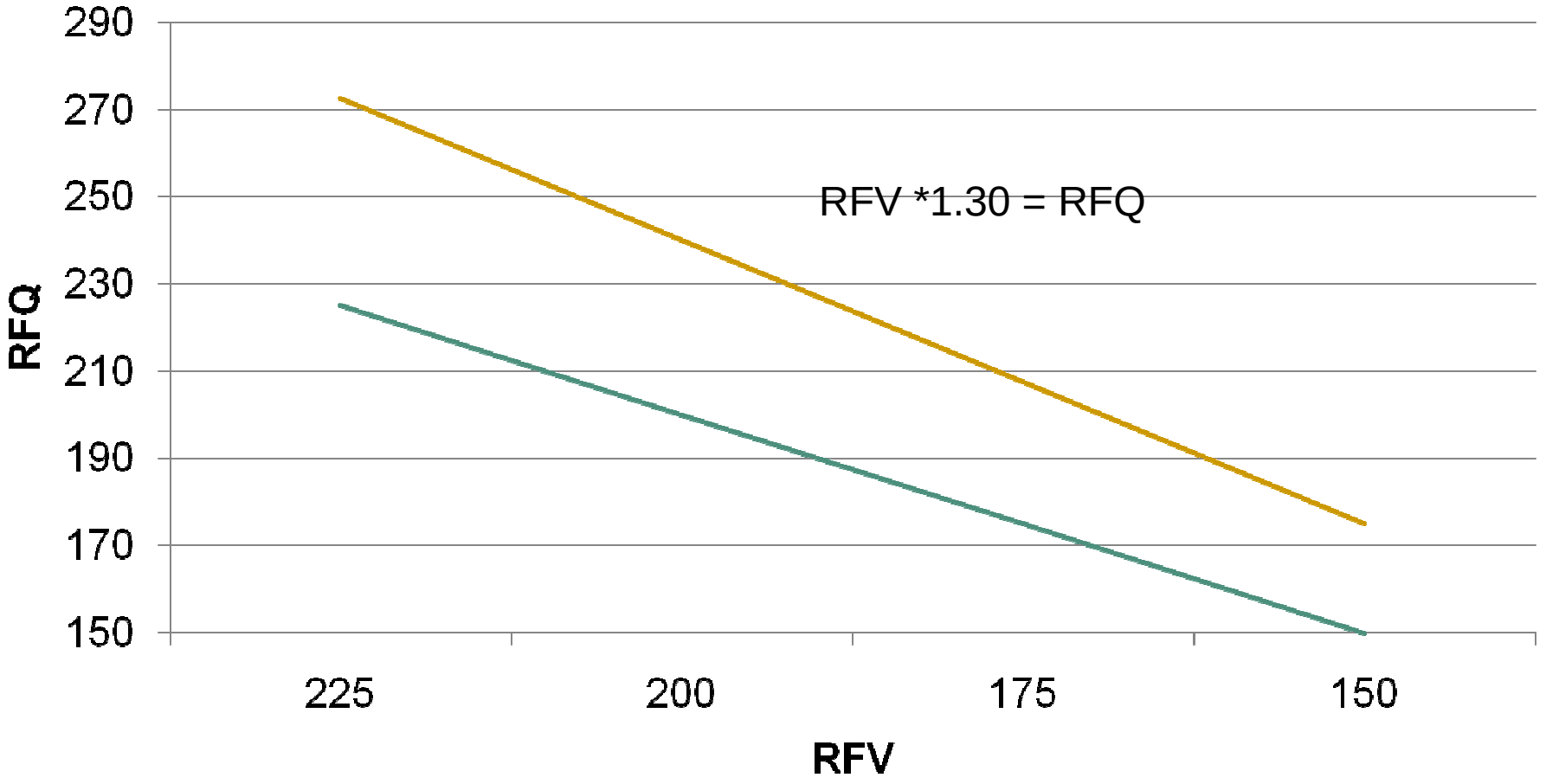
[(NFC.98) + (CP*.93) + (FA*.97*2.25) + NDF * NDFD] – 7

÷1.23

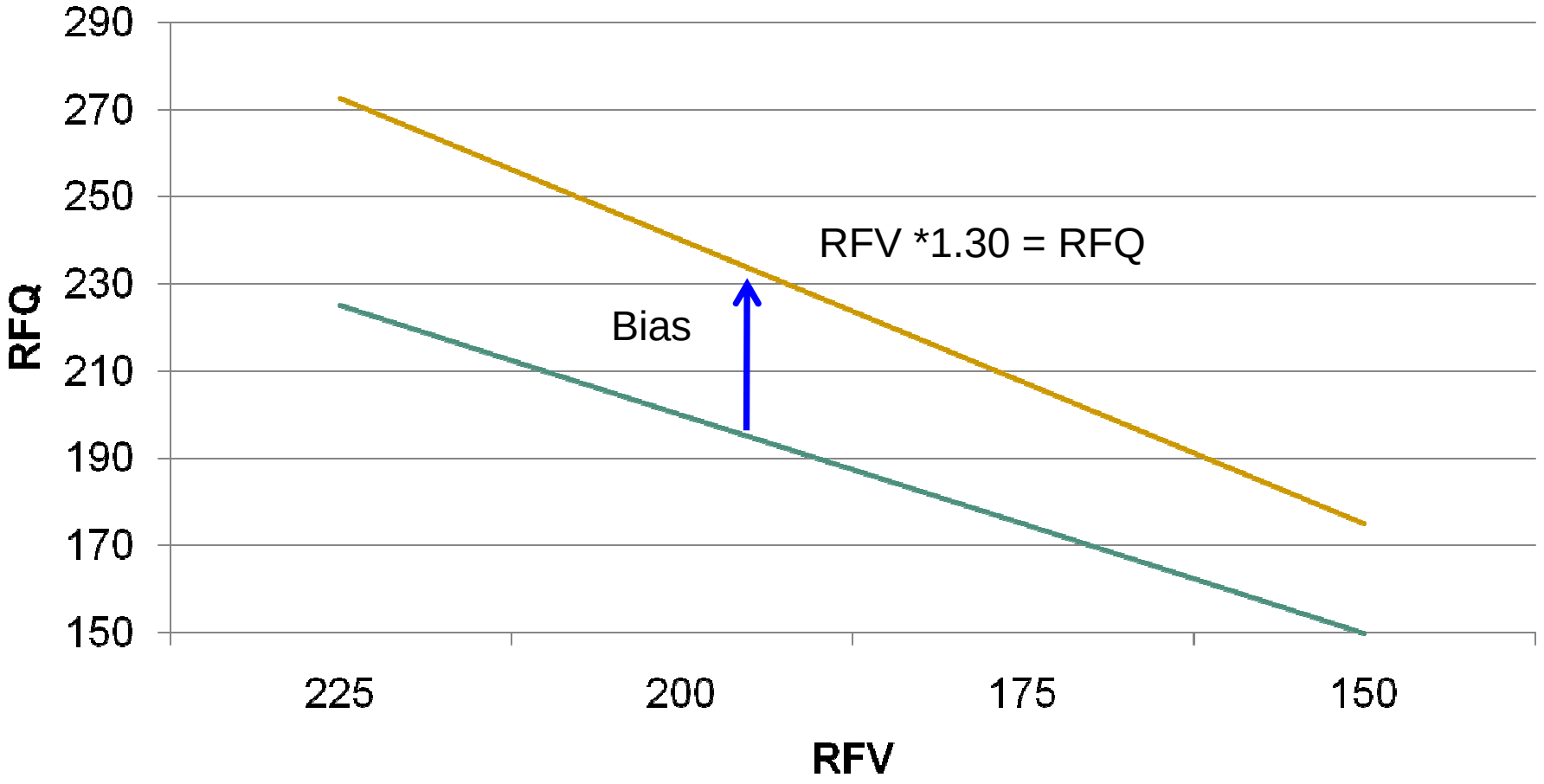
Relationship of RFV to RFQ



Relationship of RFV to RFQ



Relationship of RFV to RFQ



Relationship of RFV to RFQ

- Determine digestible fiber (and RFQ) on one sample in the early spring.
- To calculate bias from sample analysis results use the formula:
  - Bias = RFQ – (1.3 * RFV)
- To convert RFV (for example, from a forage quality stick) to RFQ:
  - RFQ = (RFV *1.3) + bias